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**Sato**

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(54) **INFORMATION PROCESSING APPARATUS, INFORMATION PROCESSING METHOD, AND COMPUTER-READABLE RECORDING MEDIUM STORING PROGRAM FOR INFORMATION PROCESSING APPARATUS**

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***G06F 3/12*** (2006.01)
*G06K 1/00* (2006.01)

(52) **U.S. Cl.**
CPC ..... ***G06F 3/1204*** (2013.01); ***G06F 3/1257*** (2013.01); ***G06F 3/1292*** (2013.01)

(58) **Field of Classification Search**
CPC ... G06F 3/1296; G06F 3/1257; G06F 3/1241; G06F 3/1288; G06F 3/1255; G06F 3/1258
USPC ..... 358/1.1, 1.4, 1.5, 1.6, 1.9, 1.11, 1.12, 358/1.13, 1.14, 1.15, 1.16, 1.17, 1.18
See application file for complete search history.

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(57) **ABSTRACT**

An information processing apparatus includes a communication unit communicable with a device via an access point which relays communication data and a controller. The controller is configured to store, in a first storage portion, setting information set for a processing in association with identification information of an access point to which the communication unit is connected. The controller is further configured to acquire the identification information of the access point to which the communication unit is connected. The controller is further configured to read the setting information stored in association with the identification information acquired from the first storage portion and to set the processing by using the read setting information.

**15 Claims, 12 Drawing Sheets**

SETTING INFORMATION MANAGEMENT TABLE 20a

| 61 | 62 | 62 | 62 |
|---|---|---|---|
| BSSID | PDF | PHOTO | SCAN |
| AP1 | DEVICE : (model : MFP-349 10.221.144.143) 64<br>DETAIL : (A4, color, off, 3) 66<br>TIME : 2010/01/30 11:34 68<br>60 | SETTING INFORMATION 1b | SETTING INFORMATION 1c |
| AP2 | SETTING INFORMATION 2a | SETTING INFORMATION 2b | SETTING INFORMATION 2c |
| AP3 | SETTING INFORMATION 3a | SETTING INFORMATION 3b | SETTING INFORMATION 3c |

Fig. 1

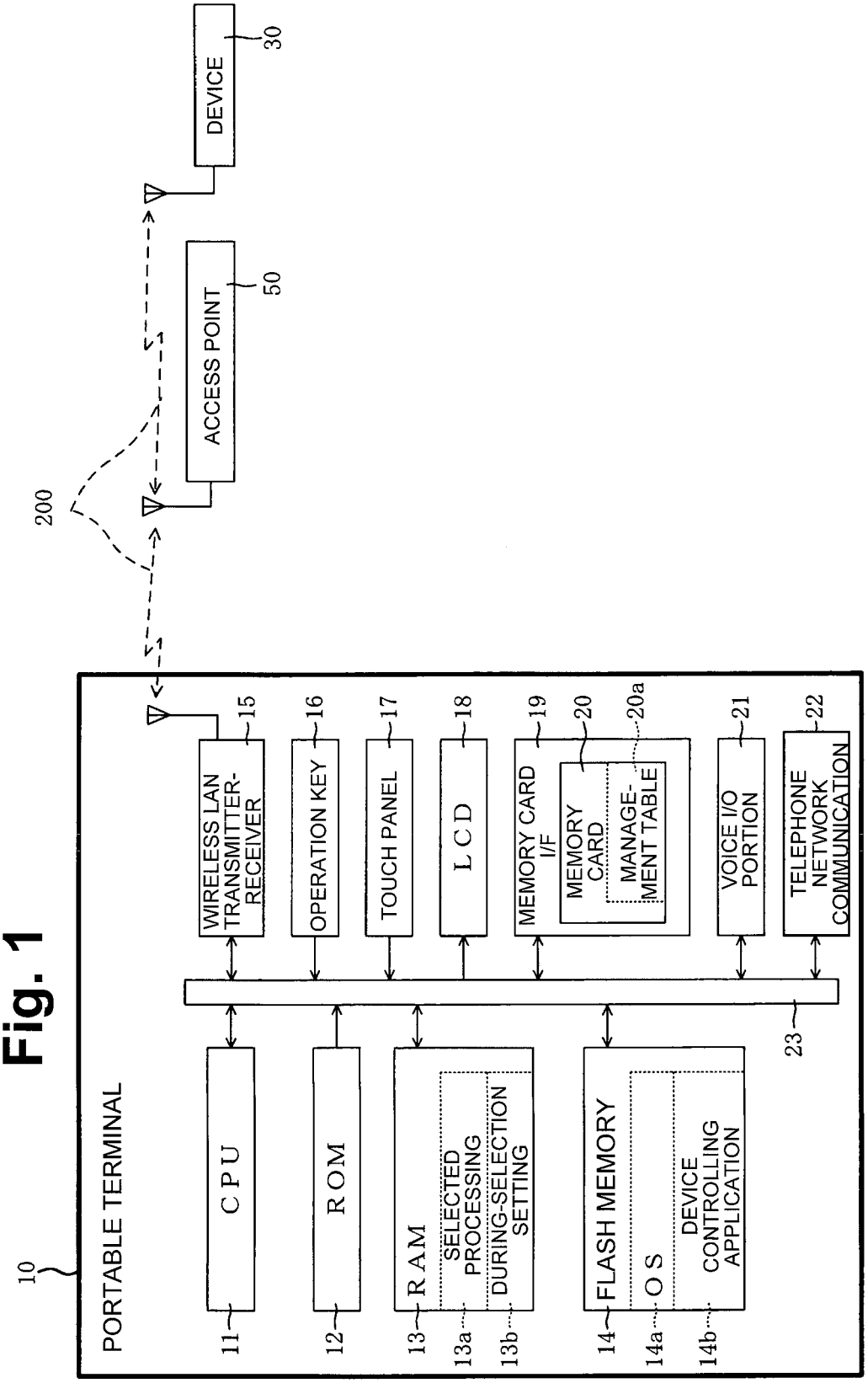
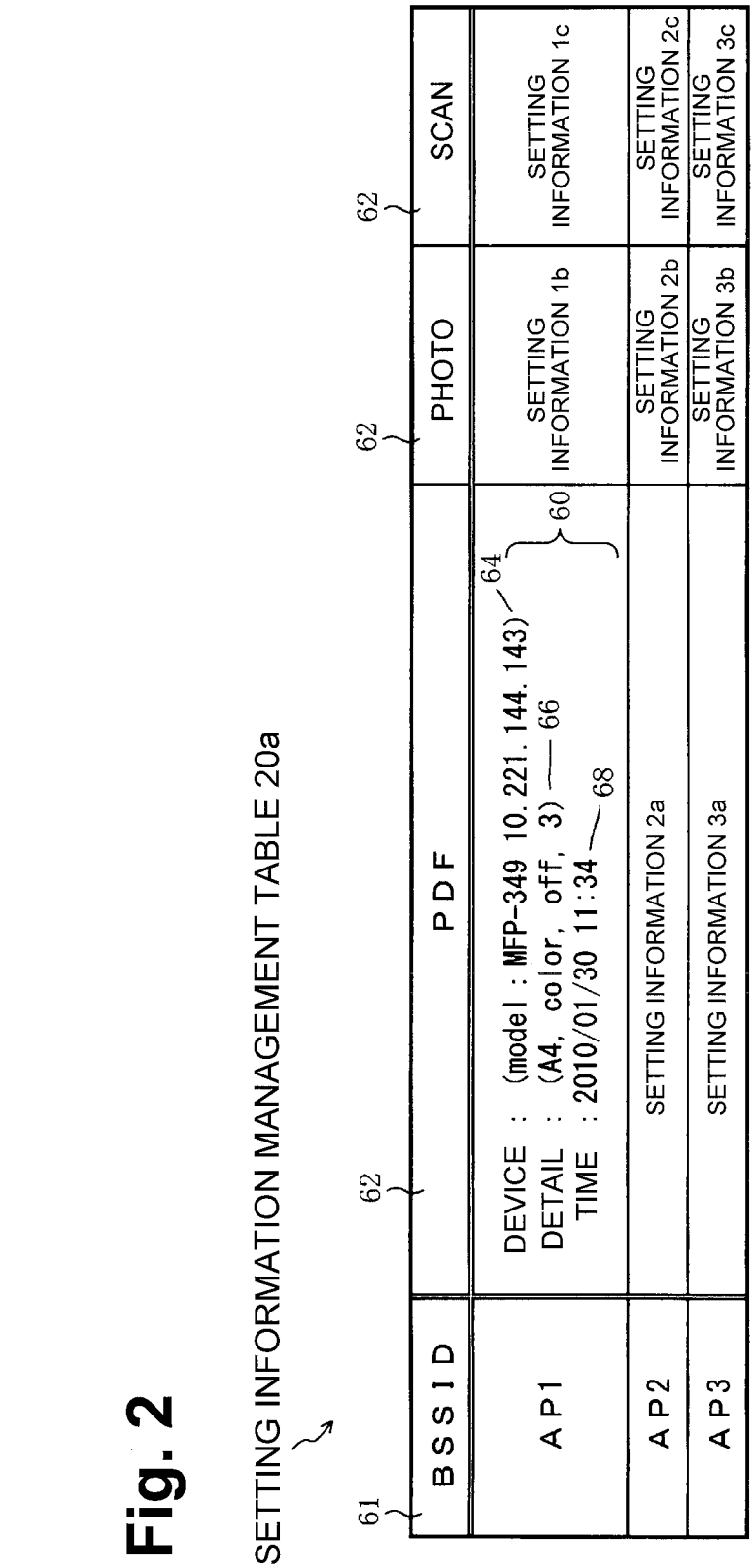
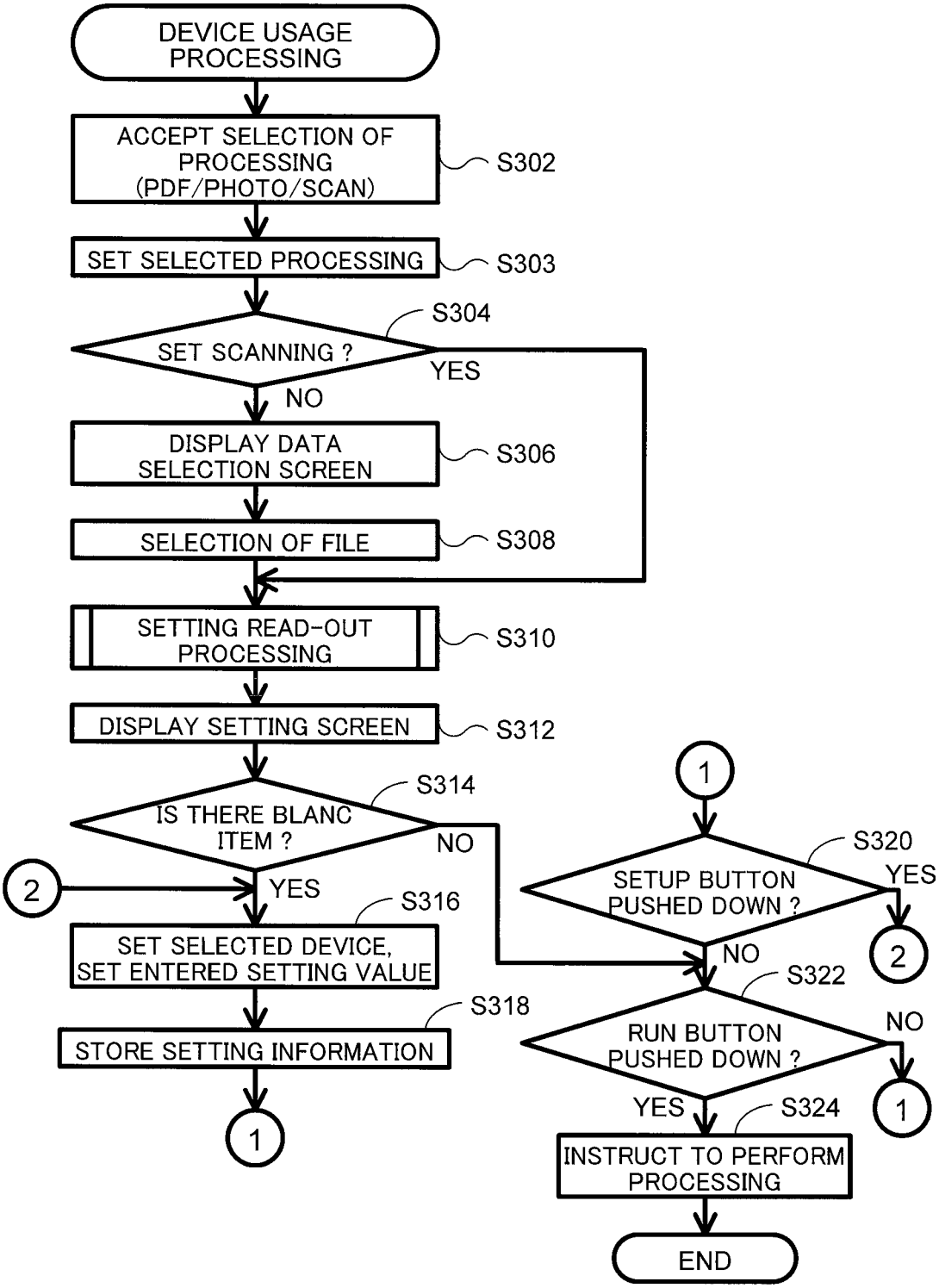

10
PORTABLE TERMINAL
C P U
11
R O M
12
R A M
13
SELECTED PROCESSING
13a
DURING-SELECTION SETTING
13b
FLASH MEMORY
14
O S
14a
DEVICE CONTROLLING APPLICATION
14b
23
WIRELESS LAN TRANSMITTER-RECEIVER
15
OPERATION KEY
16
TOUCH PANEL
17
L C D
18
MEMORY CARD I/F
19
MEMORY CARD
20
MANAGE-MENT TABLE
20a
VOICE I/O PORTION
21
TELEPHONE NETWORK COMMUNICATION
22
200
ACCESS POINT
50
DEVICE
30

Fig. 2

SETTING INFORMATION MANAGEMENT TABLE 20a



# Fig. 3


DEVICE USAGE PROCESSING
ACCEPT SELECTION OF PROCESSING (PDF/PHOTO/SCAN)
S302
SET SELECTED PROCESSING
S303
S304
SET SCANNING ?
YES
NO
DISPLAY DATA SELECTION SCREEN
S306
SELECTION OF FILE
S308
SETTING READ-OUT PROCESSING
S310
DISPLAY SETTING SCREEN
S312
S314
IS THERE BLANC ITEM ?
NO
2
YES
S316
SET SELECTED DEVICE, SET ENTERED SETTING VALUE
S318
STORE SETTING INFORMATION
1
1
S320
SETUP BUTTON PUSHED DOWN ?
YES
2
NO
S322
RUN BUTTON PUSHED DOWN ?
NO
1
YES
S324
INSTRUCT TO PERFORM PROCESSING
END

# Fig. 4

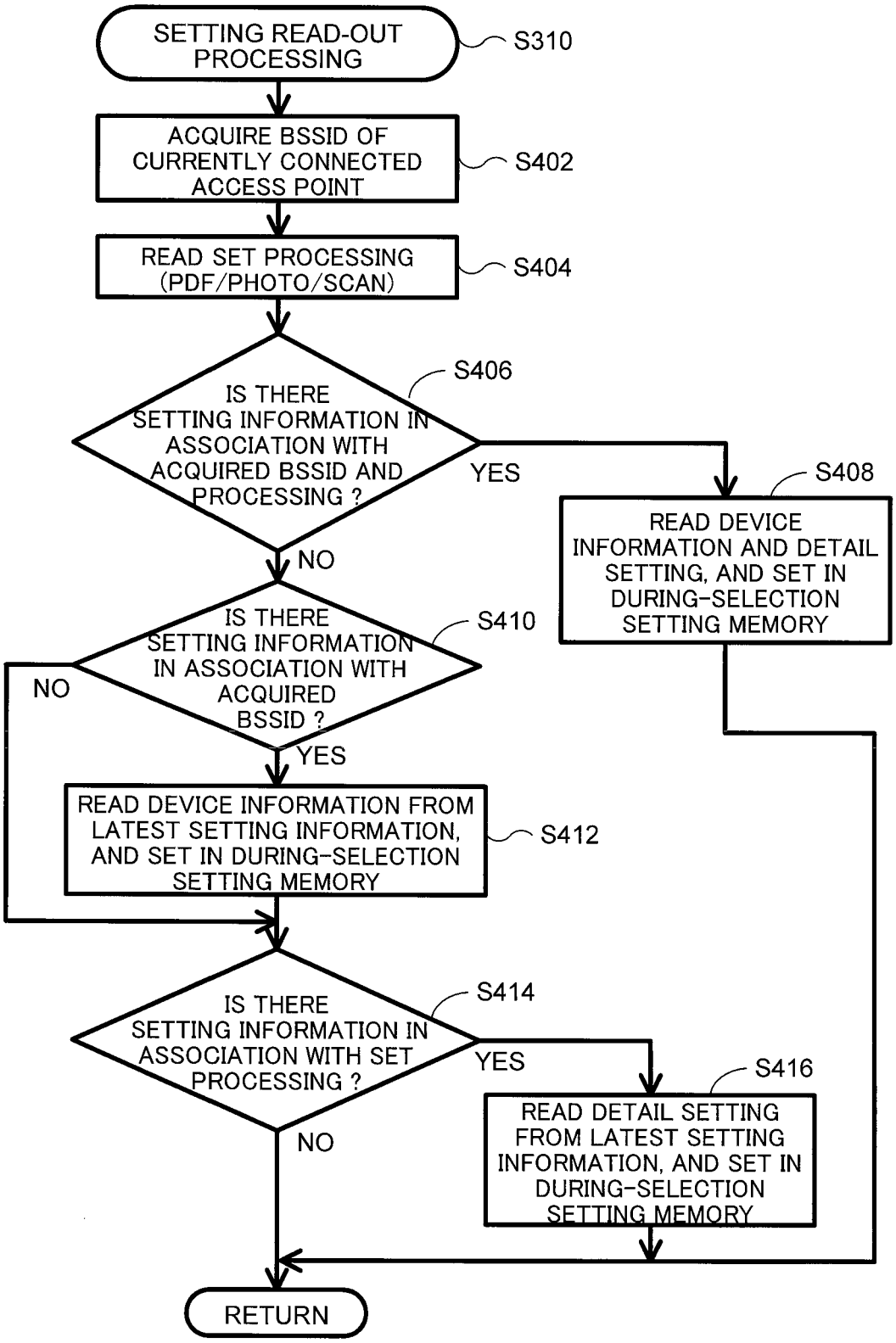

SETTING READ-OUT PROCESSING
S310
ACQUIRE BSSID OF CURRENTLY CONNECTED ACCESS POINT
S402
READ SET PROCESSING (PDF/PHOTO/SCAN)
S404
IS THERE SETTING INFORMATION IN ASSOCIATION WITH ACQUIRED BSSID AND PROCESSING ?
S406
YES
S408
READ DEVICE INFORMATION AND DETAIL SETTING, AND SET IN DURING-SELECTION SETTING MEMORY
NO
IS THERE SETTING INFORMATION IN ASSOCIATION WITH ACQUIRED BSSID ?
S410
NO
YES
READ DEVICE INFORMATION FROM LATEST SETTING INFORMATION, AND SET IN DURING-SELECTION SETTING MEMORY
S412
IS THERE SETTING INFORMATION IN ASSOCIATION WITH SET PROCESSING ?
S414
YES
S416
READ DETAIL SETTING FROM LATEST SETTING INFORMATION, AND SET IN DURING-SELECTION SETTING MEMORY
NO
RETURN

Fig. 5A

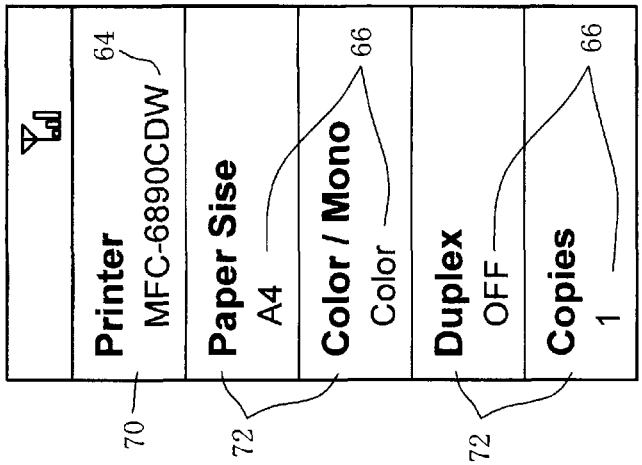



Fig. 5B

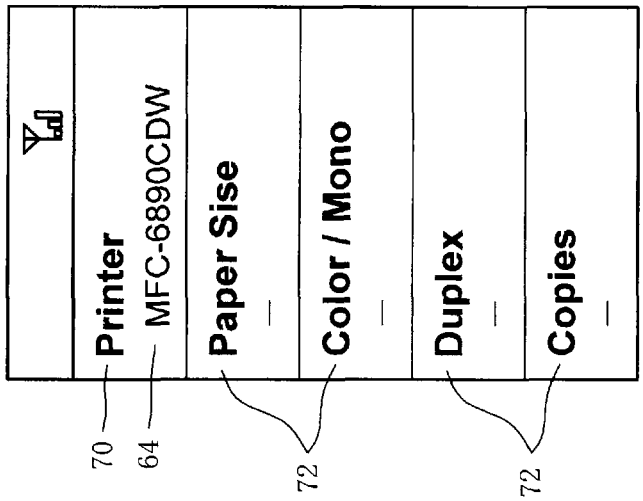
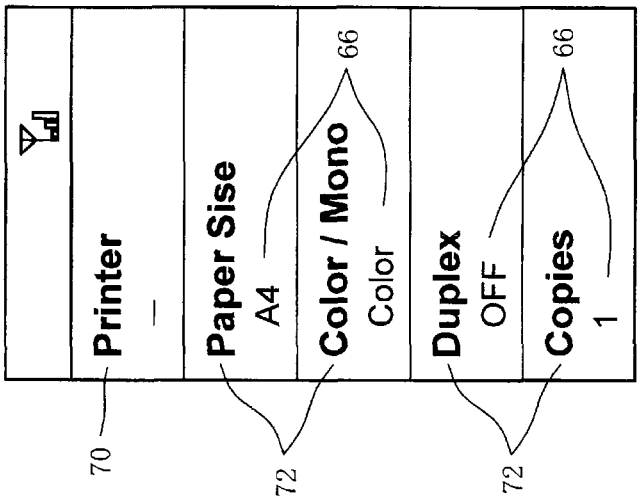
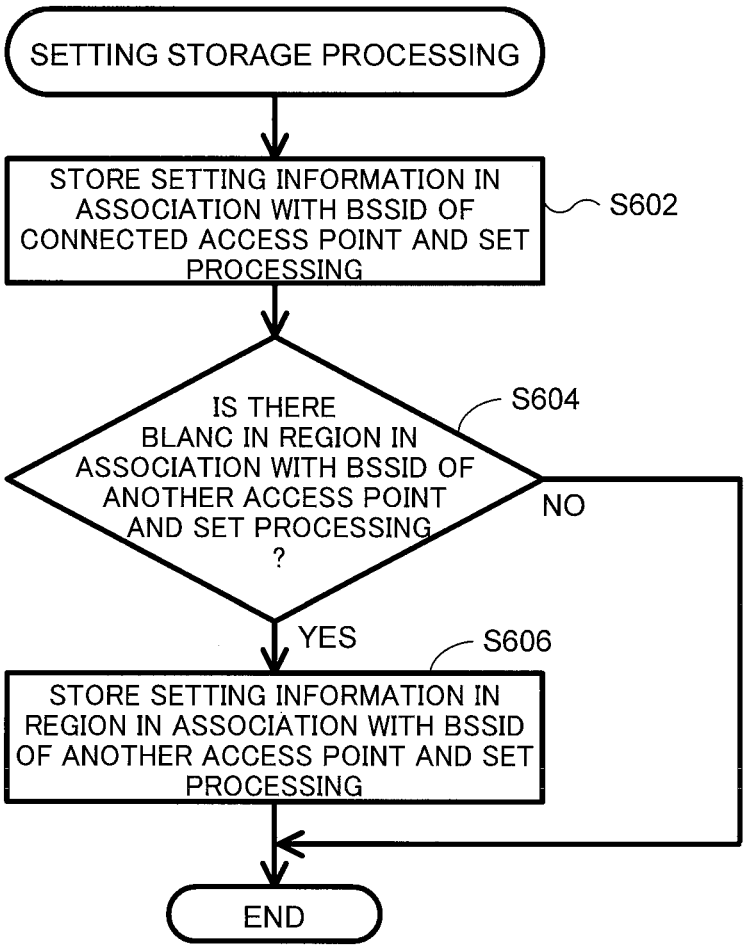



Fig. 5C



# Fig. 6A


SETTING STORAGE PROCESSING
STORE SETTING INFORMATION IN ASSOCIATION WITH BSSID OF CONNECTED ACCESS POINT AND SET PROCESSING
S602
IS THERE BLANC IN REGION IN ASSOCIATION WITH BSSID OF ANOTHER ACCESS POINT AND SET PROCESSING ?
S604
NO
YES
S606
STORE SETTING INFORMATION IN REGION IN ASSOCIATION WITH BSSID OF ANOTHER ACCESS POINT AND SET PROCESSING
END

# Fig. 6B

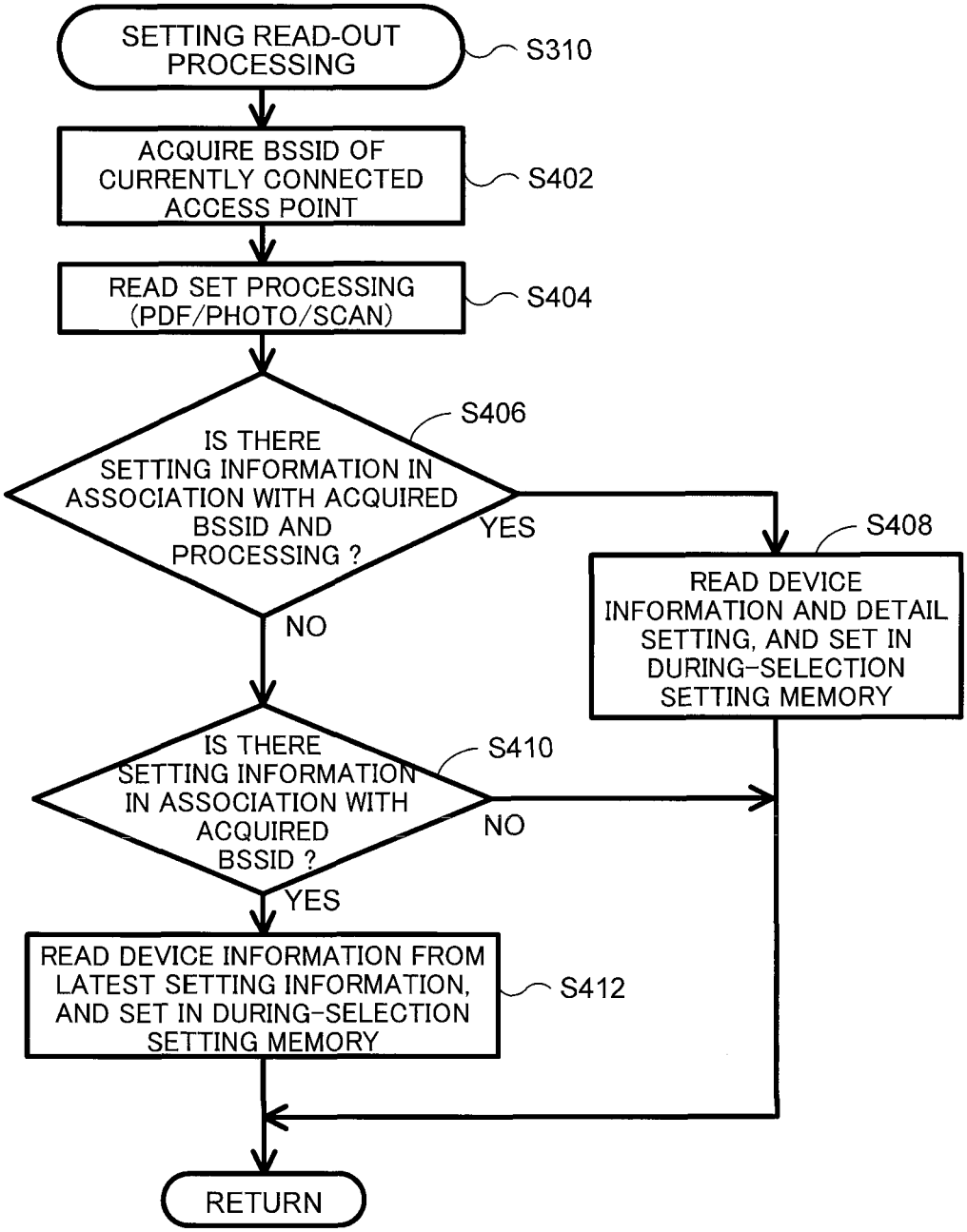

SETTING READ-OUT PROCESSING
S310
ACQUIRE BSSID OF CURRENTLY CONNECTED ACCESS POINT
S402
READ SET PROCESSING (PDF/PHOTO/SCAN)
S404
IS THERE SETTING INFORMATION IN ASSOCIATION WITH ACQUIRED BSSID AND PROCESSING ?
S406
YES
NO
READ DEVICE INFORMATION AND DETAIL SETTING, AND SET IN DURING-SELECTION SETTING MEMORY
S408
IS THERE SETTING INFORMATION IN ASSOCIATION WITH ACQUIRED BSSID ?
S410
NO
YES
READ DEVICE INFORMATION FROM LATEST SETTING INFORMATION, AND SET IN DURING-SELECTION SETTING MEMORY
S412
RETURN

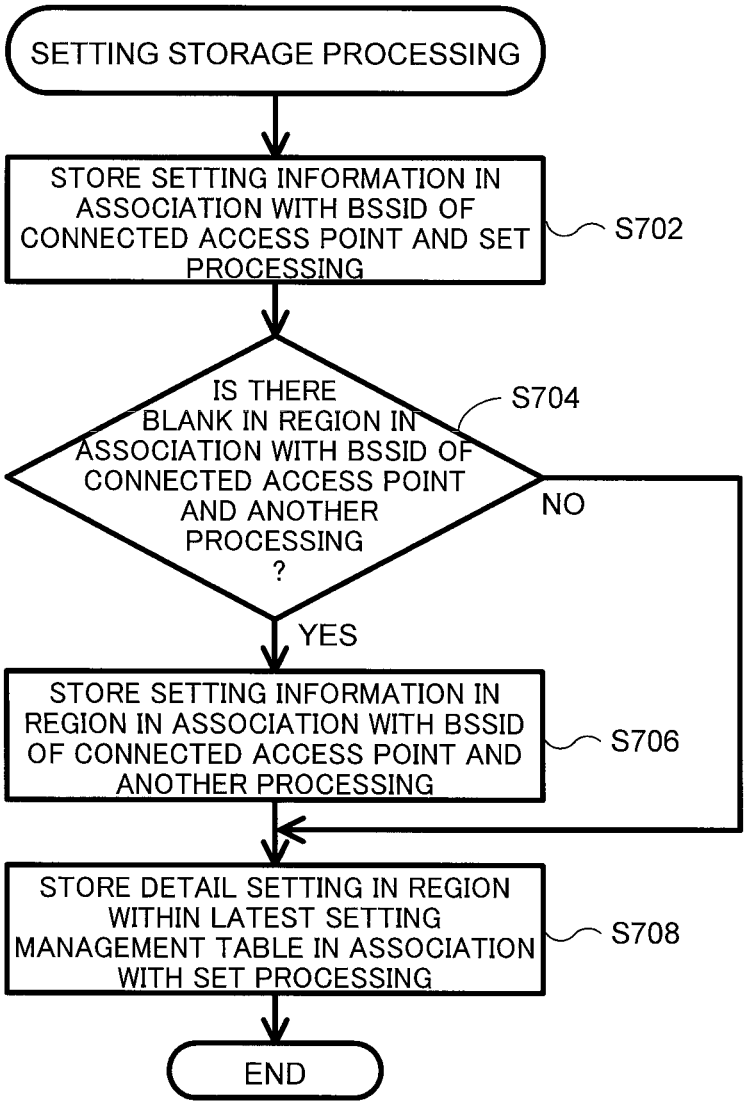
Fig. 7A

LATEST SETTING MANAGEMENT TABLE 20b

66

| 62 | | |
|---|---|---|
| | PHOTO | DETAIL SETTING 1 : (A4, color, off, 3) |
| | SCAN | DETAIL SETTING 2 |
| | PDF | DETAIL SETTING 3 |

Fig. 7B



# Fig. 8

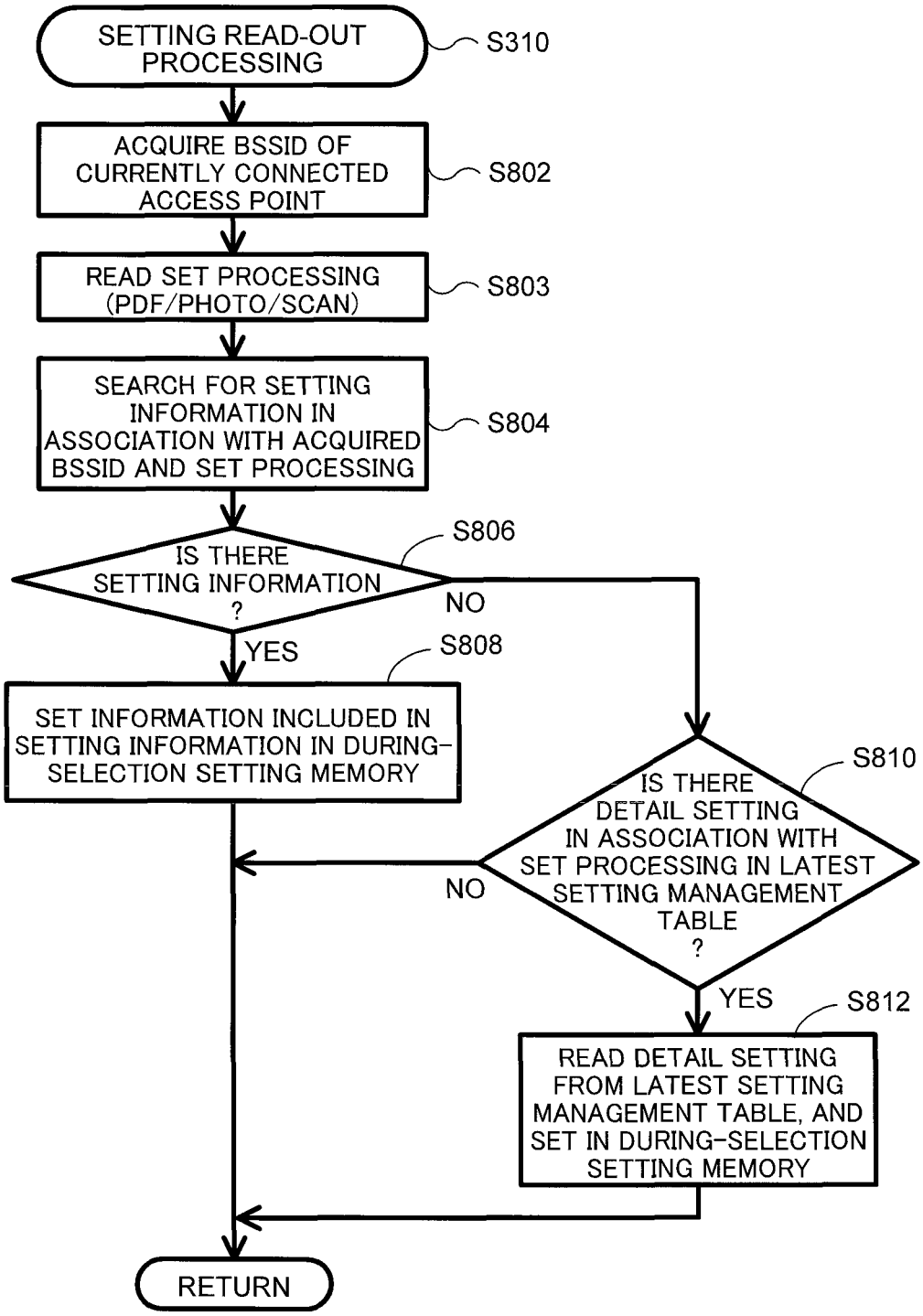

SETTING READ-OUT PROCESSING
S310
ACQUIRE BSSID OF CURRENTLY CONNECTED ACCESS POINT
S802
READ SET PROCESSING (PDF/PHOTO/SCAN)
S803
SEARCH FOR SETTING INFORMATION IN ASSOCIATION WITH ACQUIRED BSSID AND SET PROCESSING
S804
IS THERE SETTING INFORMATION ?
S806
NO
YES
S808
SET INFORMATION INCLUDED IN SETTING INFORMATION IN DURING-SELECTION SETTING MEMORY
IS THERE DETAIL SETTING IN ASSOCIATION WITH SET PROCESSING IN LATEST SETTING MANAGEMENT TABLE ?
S810
NO
YES
S812
READ DETAIL SETTING FROM LATEST SETTING MANAGEMENT TABLE, AND SET IN DURING-SELECTION SETTING MEMORY
RETURN

Fig. 9A

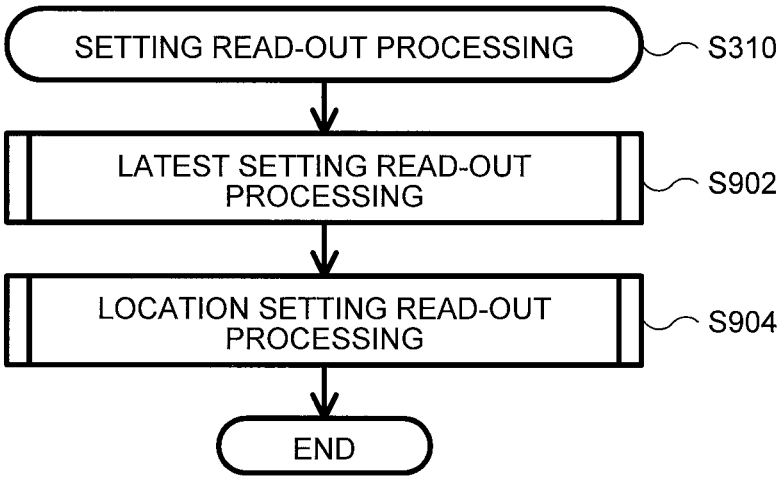
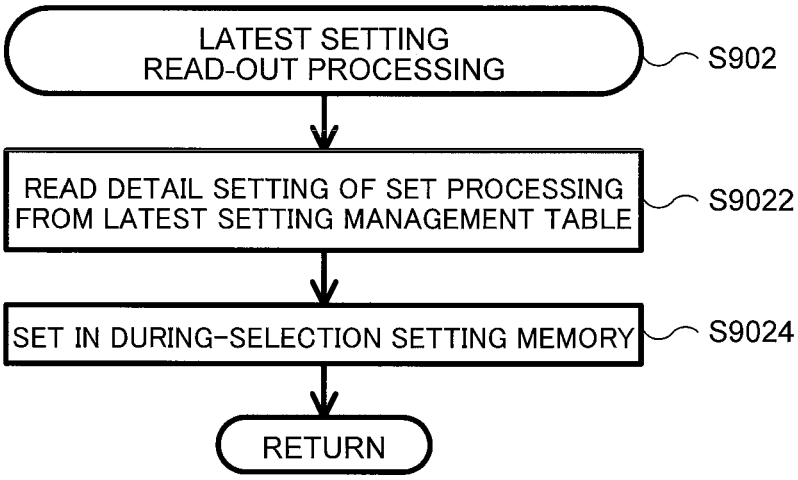
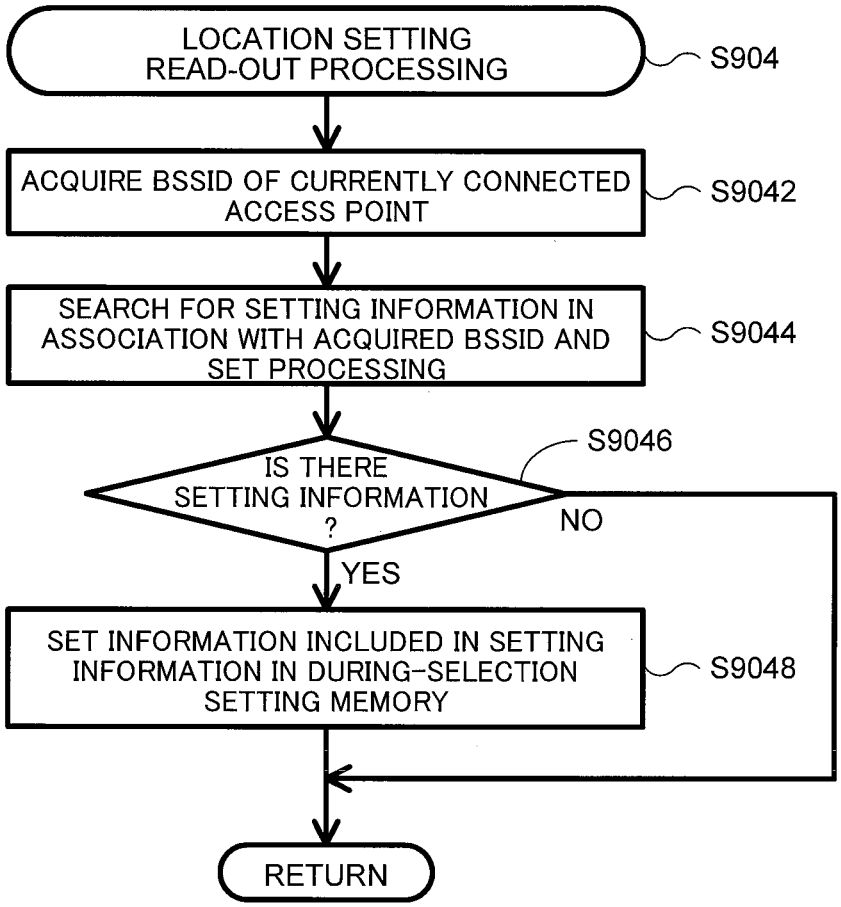

SETTING READ-OUT PROCESSING
S310
LATEST SETTING READ-OUT PROCESSING
S902
LOCATION SETTING READ-OUT PROCESSING
S904
END

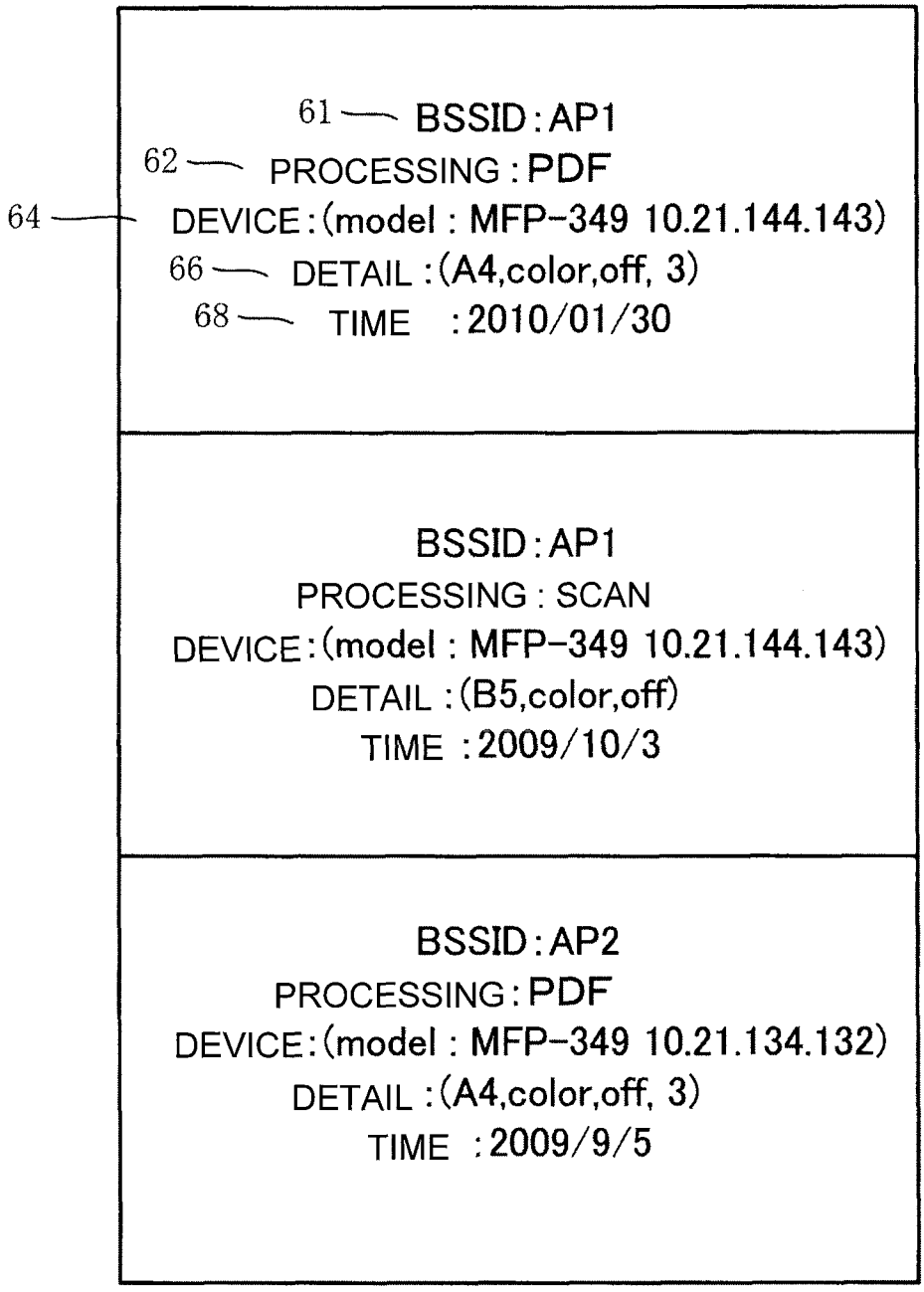
Fig. 9B


LATEST SETTING READ-OUT PROCESSING
S902
READ DETAIL SETTING OF SET PROCESSING FROM LATEST SETTING MANAGEMENT TABLE
S9022
SET IN DURING-SELECTION SETTING MEMORY
S9024
RETURN

# Fig. 9C


LOCATION SETTING READ-OUT PROCESSING
S904
ACQUIRE BSSID OF CURRENTLY CONNECTED ACCESS POINT
S9042
SEARCH FOR SETTING INFORMATION IN ASSOCIATION WITH ACQUIRED BSSID AND SET PROCESSING
S9044
IS THERE SETTING INFORMATION ?
S9046
NO
YES
SET INFORMATION INCLUDED IN SETTING INFORMATION IN DURING-SELECTION SETTING MEMORY
S9048
RETURN

# Fig. 10


61
BSSID : AP1
62
PROCESSING : PDF
64
DEVICE : (model : MFP-349 10.21.144.143)
66
DETAIL : (A4,color,off, 3)
68
TIME : 2010/01/30
BSSID : AP1
PROCESSING : SCAN
DEVICE : (model : MFP-349 10.21.144.143)
DETAIL : (B5,color,off)
TIME : 2009/10/3
BSSID : AP2
PROCESSING : PDF
DEVICE : (model : MFP-349 10.21.134.132)
DETAIL : (A4,color,off, 3)
TIME : 2009/9/5

# INFORMATION PROCESSING APPARATUS, INFORMATION PROCESSING METHOD, AND COMPUTER-READABLE RECORDING MEDIUM STORING PROGRAM FOR INFORMATION PROCESSING APPARATUS

## CROSS REFERENCE TO RELATED APPLICATION

This application claims priority from Japanese Patent Application No. 2011-067350, which was filed on Mar. 25, 2011, the entire subject matter of which is incorporated herein by reference.

## BACKGROUND

1. Technical Field

The present invention relates to an information processing apparatus, an information processing method and a computer-readable recording medium storing a program for an image forming apparatus.

2. Related Art

A personal computer which memorize, for each access point, a default printer to be presented to a user as a commonly-used printer is known.

However, the personal computer presents only the memorized default printer to the user regardless of how the user uses the printer in practice. Therefore, a workload on the user, which is needed for various settings required to cause a device to perform processing, may not be reduced sufficiently. For example, when a printer memorized as default is different from a printer that the user wants to use, it is necessary for the user to change the setting from the presented default printer to the printer every time when the user executes printing.

## SUMMARY

A need has arisen to provide an information processing apparatus and an information processing method by which appropriate setting information may be set while reducing a work load on a user.

According to an embodiment of the invention, an information processing apparatus comprises a communication unit communicable with a device via an access point which relays communication data and a controller. The controller is configured to store, in a first storage portion, setting information set for a processing in association with identification information of an access point to which the communication unit is connected. The controller is further configured to acquire the identification information of the access point to which the communication unit is connected. The controller is further configured to read the setting information stored in association with the identification information acquired from the first storage portion and to set the processing by using the read setting information.

According to an embodiment of the invention, an information processing method for an information processing apparatus, which comprises a communication unit communicable with a device via an access point which relays communication data, comprises a step of storing, in a first storage portion, setting information set for a processing in association with identification information of an access point to which the communication unit is connected. The information processing method further comprises a step of acquiring the identification information of the access point to which the communication unit is connected. The information processing method further comprises a step of reading the setting information stored in association with the identification information acquired from the first storage portion and a step of setting the processing by using the read setting information.

According to an embodiment of the invention, a non-transitory computer-readable recording medium is storing a program for an information processing apparatus which comprises a communication unit communicable with a device via an access point which relays communication data. The program, when executed by a processor, causes the information processing apparatus to execute a first storing step of storing, in a first storage portion, setting information set for a processing in association with identification information of an access point to which the communication unit is connected. The program, when executed by the processor, causes the information processing device to further execute a first acquiring step of acquiring the identification information of the access point to which the communication unit is connected. The program, when executed by the processor, causes the information processing device to still further execute a first reading step of reading the setting information stored in association with the identification information acquired from the first storage portion and a first setting step of setting the processing by using the read setting information.



## BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the present invention, the needs satisfied thereby, and the features and advantages thereof, reference now is made to the following descriptions taken in connection with the accompanying drawings wherein:

FIG. **1** is a block diagram showing the electrical configuration of a portable terminal including a device controlling application of a first embodiment;

FIG. **2** is a diagram schematically showing the configuration of a setting information management table;

FIG. **3** is a flow chart showing a device usage processing performed in the portable terminal of the first embodiment;

FIG. **4** is a flow chart showing setting read-out processing performed in the portable terminal of the first embodiment;

FIGS. **5**A to **5**C are diagrams each showing a setting screen displayed on an LCD of the portable terminal;

FIG. **6**A is a flow chart showing setting storage processing performed in a portable terminal of a second embodiment, and FIG. **6**B is a flow chart showing setting read-out processing performed in the portable terminal of the second embodiment;

FIG. **7**A is a diagram showing an example of a latest setting management table that is generated by a portable terminal of a third embodiment, and FIG. **7**B is a flow chart showing setting storage processing performed in the portable terminal of the third embodiment;

FIG. **8** is a flow chart showing setting read-out processing performed in the portable terminal of the third embodiment;

FIGS. **9**A to **9**C are flow charts each showing processing performed in a portable terminal of a fourth embodiment, FIG. **9**A showing setting read-out processing, FIG. **9**B showing latest setting read-out processing, FIG. **9**C showing location read-out processing; and

FIG. **10** is a diagram showing an example of setting information stored in a memory card when the setting information is stored without a setting information management table in a portable terminal according to a variation.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Embodiments of the invention and their features and advantages may be understood by referring to FIGS. **1**-**10**,

like numerals being used for like corresponding parts in the various drawings. Hereinafter, an embodiment of the invention will be described by appropriately referring to the drawings. Further, the embodiment to be described below is merely an example of the invention, and may be, of course, appropriately modified within the scope in which the concept of the invention is not changed.

FIG. **1** is a block diagram showing the electrical configuration of a portable terminal **10** including a device controlling application **14***b* (hereinafter referred to as the application **14***b*) of a first embodiment of the invention. The application **14***b* allows a print function and a scan function of a device **30** to be used from the portable terminal **10** without the intervention of a personal computer or the like. Particularly, using the application **14***b* allows appropriate setting information to be set while reducing a work load on a user, which is needed when printing and scanning are set.

The portable terminal **10** is a mobile phone used for voice communication with another device through a radio base station not shown. Further, the portable terminal **10** performs a radio communication **200** with another device in an infrastructure mode through an access point **50**. The portable terminal **10** includes a CPU **11**, a ROM **12**, a RAM **13**, a flash memory **14**, a wireless LAN transmitter-receiver **15** (an example of a communication unit), an operation key **16**, a touch panel **17**, a liquid crystal display **18** (hereinafter referred to as an LCD **18**), a memory card interface **19** (hereinafter referred to as a memory card I/F **19**), a voice input/output portion **21** and a telephone network communication portion **22**, which are connected through a bus line **23** to communicate with one another.

The CPU **11** controls each portion connected to the bus line **23** according to fixed values or programs stored in the ROM **12** or the like, or various signals transmitted and received through the radio communication **200**. The ROM **12** is a non-writable memory and stores various fixed values. The RAM **13** is a rewritable volatile memory and includes a selected processing memory **13***a* and a during-selection setting memory **13***b*. The selected processing memory **13***a* stores processing selected by the user among PDF printing, photo-printing and scanning that can be performed by the device **30** based on the functions of the application **14***b*. The during-selection setting memory **13***b* stores setting information related to processing performed by the device **30**.

The flash memory **14** is a rewritable nonvolatile memory and stores an operating system **14***a* (hereinafter referred to as an OS **14***a*) and the application **14***b*. In the present embodiments, the OS **14***a* is basic software incorporated into the portable terminal **10**, and may be the Android (registered trademark) OS in the present embodiments. Further, the application **14***b* may be provided by a vendor of the device **30**, and may be installed in the portable terminal **10** by a user of the portable terminal **10**. Hereinafter, the CPU **11** (an example of a processor) executing a program such as an application or an operation system may be described by only a name of a program. For example, an "application" may mean "the CPU **11** executing an application".

Each application (including the application **14***b*) installed in the portable terminal **10** may call an API of the OS **14***a* and may output to the OS **14***a* data to be delivered to each component of the portable terminal **10**, such as the wireless LAN transmitter-receiver **15**, the operation key **16**, the touch panel **17**, the LCD **18**, the memory card I/F **19**, the voice input/output portion **21** and the telephone network communication portion **22**. That is to say, each application may call the API of the OS **14***a* to control each component of the portable terminal **10**. Further, each application may call the API of the OS **14***a* and may acquire from the OS **14***a*, data output by each component of the portable terminal **10** and data indicating a state of each component. That is to say, each application may call the API of the OS **14***a* to acquire from the OS **14***a*, data indicating the state of each component of the portable terminal **10** (including a state of an operation input to the portable terminal **10**). In addition, the OS **14***a* may sometimes notify each application of data output by each component of the portable terminal **10** and data indicating the state of each component regularly or every time the state of each component is changed. That is to say, each application may receive the notice from the OS **14***a*, and may acquire from the OS **14***a* the data indicating the state of each component of the portable terminal **10** (including the state of the operation input to the portable terminal **10**).

The wireless LAN transmitter-receiver **15** (an example of a communication unit) may be a circuit for connecting via Wi-Fi (registered trademark) the portable terminal **10** with other devices through a wireless LAN compliant with the IEEE802.11b/g standard. The wireless LAN transmitter-receiver **15** may allow for the radio communication **200** between the portable terminal **10** and the access point **50**.

The operation key **16** may be a hard key provided on a housing, not shown, of the portable terminal **10**, and may be used to enter setting information and instructions into the portable terminal **10**. The touch panel **17** may be superimposed on the LCD **18** and may be used to enter setting information and instructions into the portable terminal **10**. The LCD **18** may display a list of icons indicating applications installed in the portable terminal **10**, and a screen of a launched application. The memory card I/F **19** may be an interface in which a nonvolatile memory card **20** can be inserted, and may control the writing or reading of data to/from the memory card **20**. The memory card **20** may include a setting information management table **20***a*. The setting information management table **20***a* will be described later with reference to FIG. **2**. An example of the memory card **20** may be an SD card (registered trademark). The voice input/output portion **21** may be a device for inputting/outputting voice, such as a microphone or a speaker, and the telephone network communication portion **22** may be a circuit for performing telephone communication with another telephone.

The device **30**, which may be a multi-function machine having a printer function, a scan function, a copy function and the like, may include a wireless LAN transmitter-receiver (not shown) which has the similar configuration to the wireless LAN transmitter-receiver **15** of the portable terminal **10**, and may be connected via Wi-Fi to the portable terminal **10** through radio communication mediated by the access point **50**. Further, the device **30** may be controlled by the application **14***b* of the portable terminal **10** to print an image based on the data that may be transmitted from the portable terminal **10** or to read a manuscript to generate image data and transmit the data to the portable terminal **10**. The access point **50** may relay the communication between Wi-Fi terminals.

The access point **50** may relay the communication between the Wi-Fi terminals, and a BSSID (Basic Service Set Identifier) serving as identification information may be set therefor by an administrator. The portable terminal **10** may detect the access point **50** that is presented within a range where the radio communication **200** is possible, so that the portable terminal **10** instructs the device **30** which is allowed to communicate through the detected access point **50** to perform printing or scanning. Note that there may be one or more devices available through the access point **50** other than the device **30**. However, in this embodiment, only one device **30**

is shown as a device available through the access point **50** in order to make the present invention easier to understand.

FIG. **2** is a diagram schematically showing the configuration of the setting information management table **20***a*. The setting information management table **20***a* may store setting information **60** in association with a BSSID **61** of the access point **50** and a processing type **62** that is instructed to the device **30**. This setting information management table **20***a* may be generated by the application **14***b* and may be stored in the memory card **20**. Note that the BSSID **61** may be constituted by a 48-bit number; but, in FIG. **2**, the BSSID is represented by a simple character string. Further, the processing type **62** may represent the type of processing that may be instructed to the device **30** by the application **14***b*. In the present embodiment, the processing type **62** may includes PDF printing, photo-printing and scanning.

The setting information **60** indicates setting information set for each processing, and may include device information **64** (an example of specifying information) and a detail setting **66**. The device information **64** may be used to specify the device **30**, and may include a model name and an IP address of the device **30**. The detail setting **66** may include setting values of various items related to processing performed by the device **30**, for example, paper size, color printing/monochrome printing, presence of duplex printing, and the number of print copies.

When a user activates the application **14***b* with the portable terminal **10** connected to one of the access points **50**, the application **14***b* may prompt the user to select processing to be performed by the device **30** or to set the device information **64** and the detail setting **66**, which will be described in detail later with reference to the flow chart of FIG. **3**. Then, the application **14***b* may instruct the device **30** specified by the device information **64** among the devices **30** available through the connected access point **50** to perform the processing selected by the user.

In addition, the application **14***b* may store in the setting information management table **20***a* the device information **64** and the detail setting **66** set by the user in association with the BSSID **61** of the connected access point **50** and the processing type **62** selected by the user. When the portable terminal **10** is connected to the access point **50** again to which the portable terminal **10** was connected in the past, and the user selects the same processing as that was selected by the user when the portable terminal **10** was connected to the access point **50** in the past, the application **14***b* may use the setting information **60** stored in the setting information management table **20***a* to reduce the work load on the user, which may be needed for the setting operation of the device information **64** and the detail setting **66**. Note that the setting information **60** may include time information **68** indicating a date and time when the setting information **60** is stored in the setting information management table **20***a*.

FIG. **3** is a flow chart showing a device usage processing performed by the CPU **11** of the portable terminal **10** according to the application **14***b*. This processing may be performed when the user activates the application **14***b* in the portable terminal **10**. However, before this processing is started, the portable terminal **10** may be connected via Wi-Fi to one of the access points **50**. Note that each step shown in the flow charts of FIGS. **3**, **4** and **6** to **9** described below will be described in such a way that the application **14***b* causes the CPU **11** to perform or that the application **14***b* uses a function of the OS **14***a* and the like to cause the CPU **11** to perform. However, some steps included in each flow chart may be replaced with steps that the OS **14***a* and other applications cause the CPU **11** to perform. Further, without intervention of the CPU **11**, some steps may be replaced with steps implemented by operating hardware itself, e.g., ASIC, provided on the portable terminal **10**.

First, in step S**302** (hereinafter, "step" may be omitted), the CPU **11** (an example of a processor) may cause the LCD **18** to display icons corresponding to PDF printing, photo-printing, and scanning, respectively, to accept the selection of processing (S**302**). More specifically, when the CPU **11** recognizes whether or not an electric signal corresponding to a region where one of the icons corresponding to one of PDF printing, photo-printing, and scanning is displayed is entered from the touch panel **17**, and, if the corresponding electric signal is entered from the touch panel **17**, the CPU **11** may determine that the selection of processing indicated by the icon displayed in the region corresponding to the entered electric signal has been accepted. Then, the CPU **11** may set the processing indicated by the icon touched by the user in the selected processing memory **13***a* (S**303**). When the processing set in the selected processing memory **13***a* (hereinafter referred to simply as set processing) is PDF printing or photo-printing (S**304**: No), the CPU **11** may cause the LCD **18** to display a data selection screen (S**306**). When the processing set in the selected processing memory **13***a* is PDF printing, the LCD **18** may display the data selection screen listing icons of PDF format files (hereinafter referred to as PDF files) among data stored in the memory card **20**. On the other hand, when the set processing is photo-printing, the LCD **18** may display the data selection screen listing thumbnails of image files. e.g., JPEG format files (hereinafter referred to as JPEG files), among data stored in the memory card **20**.

Then, when the user touches one of the icons or one of the thumbnails displayed on the data selection screen, an electric signal corresponding to the region touched on the touch panel **17** by the user may be entered into the CPU **11**. When the electric signal is entered from the touch panel **17**, the CPU **11** may determine that a file specified by the icon or the thumbnail displayed in the region corresponding to the entered electric signal is entered as a file that is to be processed (S**308**). Note that when processing for scanning is entered (S**304**: Yes), the CPU **11** skips processing of S**306** and S**308**. Next, the CPU **11** performs setting read-out processing (S**310**).

FIG. **4** is a flow chart showing an example of the setting read-out processing (S**310**). First, the CPU **11** may acquire through the wireless LAN transmitter-receiver **15** the BSSID of one of the access points **50** connected via the wireless LAN transmitter-receiver **15** (S**402**), and reads the processing set in S**303** from the selected processing memory **13***a* (S**404**).

Next, when the setting information **60** in association with the acquired BSSID **61** and the set processing type **62** is stored in the setting information management table **20***a* (S**406**: Yes), the CPU **11** may read from the setting information management table **20***a* the setting information **60** stored in association with the acquired BSSID **61** and the set processing type **62**, and may set the device information **64** and the detail setting **66** included in the setting information **60** in the during-selection setting memory **13***b* (S**408**). Then, the CPU **11** may return to the processing of S**312** (see FIG. **3**).

Meanwhile, when no setting information **60** in association with the acquired BSSID **61** and the set processing type **62** is stored in the setting information management table **20***a* (S**406**: No), but there is the setting information **60** in association with the BSSID **61** of one of the connected access points **50**, and another processing type **62** that is different from the set processing (S**410**: Yes), the CPU **11** may read the device information **64** from the setting information **60** in association with the BSSID **61** of the one of the connected access points

50, and the another processing type 62 that is different from the set processing, and may set in the during-selection setting memory 13*b* (S412). Note that when plural pieces of the setting information 60 are stored in association with the connected BSSID 61, the CPU 11 may select, from among the plural pieces of setting information 60, the latest setting information 60 stored in the setting information management table 20*a* based on the time information 68, and may set the device information 64 included in the setting information 60 in the during-selection setting memory 13*b*. Meanwhile, if there is no setting information 60 in association with the BSSID 61 of the one of the connected access points 50 (S410: No), the CPU 11 skips the processing of S412.

Next, the setting information 60 in association with the acquired BSSID 61 and the set processing type 62 is not stored in the setting information management table 20*a* (S406: No), but the setting information 60 in association with the BSSID 61 of another access point that is different from one of the connected access points 50, and the set processing type 62 is stored in the setting information management table 20*a* (S414: Yes), the CPU 11 may read the detail setting 66 from the setting information 60 in association with the BSSID 61 of the other access point, and the set processing type 62, and may set the detail setting 66 in the during-selection setting memory 13*b* (S416). Note that when plural pieces of the setting information 60 in association with the set processing type 62 are stored, the CPU 11 may select the latest setting information 60 stored in the setting information management table 20*a* based on the time information 68 from among the plural pieces of setting information 60, and may set the detail setting 66 thereof in the during-selection setting memory 13*b*. Meanwhile, when the setting information 60 in association with the set processing type 62 is not stored in the setting information management table 20*a* (S414: No), the CPU 11 skips the processing of S416.

Returning to FIG. 3, the description is continued. Next, the CPU 11 may cause the LCD 18 to display a setting screen (S312). The setting screen may be configured to accept an input of selection of the device information 64 and the detail setting 66. However, if the device information 64 or the detail setting 66 read from the setting information management table 20*a* is set in the during-selection setting memory 13*b* in the setting read-out processing (S310), the setting screen may be displayed with the device information 64 or the detail setting 66 set.

FIG. 5A is a diagram showing an example of the setting screen. As shown in FIG. 5A, the setting screen may include a device setting item 70 and a detail setting item 72. When the device information 64 read from the setting information management table 20*a* has been stored in the during-selection setting memory 131), in the application 14*b*, the device information 64 may be displayed in the device setting item 70. Similarly, when the detail setting 66 read from the setting information management table 20*a* has been stored in the during-selection setting memory 13*b*, the detail setting 66 may be displayed in the detail setting item 72.

That is to say, if the access point 50 that was connected in the past is connected again, and the setting information 60 in association with the processing accepted when the access point 50 was connected in the past is left in the setting information management table 20*a*, when the same processing is accepted, the device information 64 and the detail setting 66 that were set previously may be inherited, and may be displayed in the setting screen as shown in FIG. 5A.

Therefore, from the standpoint of the user, since a setting operation can be started from a situation where the appropriate device information 64 and detail setting 66 that are adapted to surrounding environments are set, the work load on the user may be reduced. For example, after instructing the device 30 to perform PDF printing from one access point 50, the user moves to another access point 50, and sets the device information 64 for specifying another device available to the other access point 50 and the detail setting 66 appropriate to the properties and functions of the other device. Then, when the user returns to the original access point 50 and instructs PDF printing again, the device information 64 and the detail setting 66 which were set when the original access point 50 was connected in the past may be inherited and used.

FIG. 5B shows an example of a setting screen to be displayed on the LCD 18 when the device information 64 in association with the BSSID 61 of the connected access point 50 and the processing type 62 that is different from set processing are read and stored in the during-selection setting memory 13*b* (S412). In this case, the device information 64 in association with the BSSID 61 of the connected access point 50 is displayed in the device setting item 70, but a setting value of the detail setting item 72 is blank.

The setting screen shown in FIG. 5B is a setting screen displayed in a case where the user, when connected again to the access point 50 which was connected in the past, selects processing that is different from when the user was connected to the access point 50 in the past. According to the setting screen shown in FIG. 5B, the user can start a setting operation from the situation where the device information 64 that was set when the user was connected to the access point 50 in the past, namely, the device information 64 of the device 30 which is more likely to be used via the currently connected access point 50 has already been set. Thus, the work load on the user, which is needed for the setting operation, may be reduced.

FIG. 5C shows an example of a setting screen to be displayed on the LCD 18 when the detail setting 66 in association with the BSSID 61 of another access point 50 that is different from the connected access point 50 and the set processing type 62 is read and stored in the during-selection setting memory 13*b* (S416). In this case, the detail setting 66 in association with the set processing type 62 is displayed in the detail setting item 72, but a setting value of the device setting item 70 is blank.

The setting screen shown in FIG. 5C is a setting screen displayed in the case where the user connects to one access point 50 for the first time, when the user selects processing selected via another access point 50. According to the setting screen shown in FIG. 5C, the user can start a setting operation from the situation where the detail setting 66 that was set when the user selected the processing in the past, namely, the detail setting 66 which is more likely to be set in connection with the currently set processing has already been set. Thus, the work load on the user, which is needed for the setting operation, may be reduced.

Particularly, in the present embodiment, as printing processing, PDF printing for printing a PDF file and photo-printing for printing a JPEG file may be provided. Between printing the PDF file and printing the JPEG file, the most suitable detail setting 66 may differ, for example, in the selection of the paper size or the selection of color printing/monochrome printing. According to the present embodiment, since the setting information 60 is stored for each of the PDF printing and the photo-printing, the detail setting 66 appropriate to the set processing type may be set while reducing the work load on the user.

Returning to FIG. 3, the description is continued. Next, when in a setting item, there is no blank item (item where no setting value is set) (S314: No), and when an instruction to

execute processing is entered by pushing down a run button (not shown) (S322: Yes), the CPU **11** may instruct the device **30** specified by the device information **64** set in the during-selection setting memory **13***b* to perform the processing selected by the user based on the detail setting **66** (S324), and finishes the device usage processing.

Note that the run button may be the operation key **16** which may be a hard key, or may be a soft key (not shown) displayed on the setting screen. The CPU **11** may determine whether or not the run button is pushed down based on the electric signal entered through the operation key **16** or the electric signal corresponding to the region where the soft key entered through the touch panel **17** is displayed.

Meanwhile, in the setting item, when there is a blank item (S314: Yes), the CPU **11** may accept an input of a selection of the device **30** and a setting value of the processing (S316). Specifically, the following processing may be performed. When the selection of the device **30** is accepted, the CPU **11** may cause the LCD **18** to display the icon indicating the device **30** connected to the access point **50**. Then, when the user selects the device and touches the icon thereof, the electric signal corresponding to the region where the icon is displayed on the LCD **18** may be entered into the CPU **11** from the touch panel **17**. When the electric signal is entered, the CPU **11** may determine that the device indicated by the icon displayed in the region corresponding to the entered electric signal is selected by the user. The processing in the case where the input of the setting value is accepted may be similarly performed. The CPU **11** may cause the LCD **18** to display the icon of the setting value for each item. When the electric signal corresponding to the region where the icon is displayed on the LCD **18** is entered from the touch panel **17**, the CPU **11** may determine that the setting value indicated by the icon displayed in the region corresponding to the entered electric signal is entered by the user. Then, the CPU **11** may set the device information **64** of the device **30** selected by the user in the during-selection setting memory **13***b*, or the entered setting value (detail setting **66**) in the during-selection setting memory **13***b*. Note that when any device information **64** or detail setting **66** has been already stored in the during-selection setting memory **13***b*, it may be updated (changed). Next, the CPU **11** may store in the setting information management table **20***a*, the setting information **60** including the device information **64**, the detail setting **66**, and the time information **68** representing the current date and time which have been set in the during-selection setting memory **13***b* in association with the BSSID **61** of the connected access point **50** and the set processing type **62** (S318). That is to say, the latest setting information **60** may be stored in the setting information management table **20***a* at any time.

Next, when a setup key is pushed down (S320: Yes), the CPU **11** may repeat the processing from S316 onward. Note that the setup key may be the operation key **16** which may be a hard key, or may be a soft key (not shown) displayed on the setting screen. When the setup key is not pushed down (S320: No), and when the run button is not pushed down (S322: No), the CPU **11** may repeat the processing from S320 onward. Then, when the run button is pushed down while the processing is repeated, (S322: Yes), the CPU **11** may instruct the device **30** specified by the device information **64** set in the during-selection setting memory **13***b* to perform the processing selected by the user based on the detail setting **66** (S324), and finishes the device usage processing.

According to the application **14***b* of the first embodiment, the device information **64** and the detail setting **66** which were set in the during-selection setting memory **13***b* in the past may be inherited, thus the work load on the user, which is needed for the setting operation, may be reduced.

Other embodiments of the present invention will now be described. In each embodiment which will be described below, since the electrical configurations of the portable terminal **10** and the device **30** may be the same as those described in the first embodiment, the same reference symbols as those in the first embodiment are assigned thereto and the description thereof will be omitted.

FIGS. **6**A and **6**B show the processing performed by the CPU **11** according to the application **14***b* of a second embodiment, FIG. **6**A being a flow chart showing an example of setting storage processing, FIG. **6**B being an example of a flow chart showing setting read-out processing. The application **14***b* of the second embodiment may cause the CPU **11** to perform the setting storage processing shown in FIG. **6**A instead of S318 in the device usage processing of the first embodiment. In addition, the application **14***b* of the second embodiment may cause the CPU **11** to perform the setting read-out processing shown in FIG. **6**B instead of the setting read-out processing of the first embodiment (S310). Other processing which the application **14***b* of the second embodiment causes the CPU **11** to perform may be similar to that of the first embodiment. Note that, in the second embodiment, the same reference symbols as those in the first embodiment are assigned to the same processing as that described in the first embodiment and the drawings and the description thereof will be omitted.

The setting storage processing shown in FIG. **6**A may be performed every time when the device information **64** or the detail setting **66** stored in the during-selection setting memory **13***b* are updated because of acceptance in the setting screen of the selection of the device **30** or the input of the setting value. In this setting storage processing, the CPU **11** may first cause the setting information **60** to be stored in the setting information management table **20***a* in association with the BSSID **61** of the connected access point **50** and the processing type **62** set in the during-selection setting memory **13***b* (hereinafter referred to as set processing as in the first embodiment) (S602).

Next, if, in the setting information management table **20***a*, within the region in association with the BSSID **61** of another access point **50** that is different from the connected access point **50**, and the set processing type **62**, there is a blank region, in other words, if, within the region in association with the set processing type **62**, there is a region where no setting information **60** has been stored (S604: Yes), the CPU **11** may cause the setting information **60** including the detail setting **66** set in the during-selection setting memory **13***b* to be stored in the blank region (S606). That is to say, the setting information **60** may be stored in association with the BSSID of the other access point **50** and set processing. However, here, the setting information **60** that is to be stored may include the detail setting **66** and the time information **68**, but not device information **64**. Note that if, in the setting information management table **20***a*, within the region in association with the BSSID **61** of another access point **50** that is different from the connected access point **50** and the set processing type **62**, there is no blank region (S604: No), the CPU **11** skips the processing of S606.

FIG. **6**B is a flow chart showing an example of the setting read-out processing (S310) performed by the CPU **11** of the portable terminal **10** of the second embodiment. This setting read-out processing (S310) may be performed instead of the setting read-out processing (S310) of the first embodiment, which is different from that of the first embodiment in that the

processing of S414 and the processing of S416 included in the setting read-out processing of the first embodiment are not included.

That is to say, as described with reference to FIG. 6A, in the second embodiment, when the setting information 60 is stored in association with the BSSID 61 of the connected access point 50 and the set processing type 62, the setting information 60 of another access point 50 may be also stored. Thus, according to the setting read-out processing of the second embodiment, even if processing is to be set for the first time at one access point 50, when setting processing set in another access point 50 in the past, the detail setting 66 set for the same processing in the past may be read from the setting information management table 20*a* and inherited as the setting information 60 in association with the connected access point 50.

Therefore, according to the setting read-out processing of the second embodiment, unlike the first embodiment, processing may be finished without determining whether or not there is the setting information 60 in association with the BSSID 61 of the other access point 50 and the set processing (i.e. processing of S414 and processing of S416 are omitted). According to the application 14*b* of the second embodiment, the work load on the user, which is needed for the setting operation, may be reduced.

A third embodiment will be described with reference to FIGS. 7A and 7B, and FIG. 8. FIG. 7A is a drawing showing an example of the configuration of a latest setting management table 20*b* that is generated by the application 14*b* of the third embodiment in the memory card 20. As shown in FIG. 7A, the latest setting management table 20*b* may store the latest detail setting 66 that is set for each processing in association with the processing type 62.

FIG. 7B is a flow chart showing setting storage processing performed by the CPU 11 according to the application 14*b* of the third embodiment, and FIG. 8 is a flow chart showing setting read-out processing (S310). The application 14*b* of the third embodiment may cause the CPU 11 to perform the setting storage processing shown in FIG. 7B instead of S318 in the device usage processing of the first embodiment. In addition, the application 14*b* of the third embodiment may cause the CPU 11 to perform the setting read-out processing shown in FIG. 8 instead, of the setting read-out processing of the first embodiment (S310). Other processing which the application 14*b* of the third embodiment causes the CPU 11 to perform may be similar to that of the first embodiment.

As shown in FIG. 7B, in the setting storage processing, the CPU 11 first may cause the setting information 60 to be stored, in the setting information management table 20*a*, within a region in association with the BSSID 61 of the connected access point 50 and the processing type 62 set in the during-selection setting memory 13*b* (as in the first embodiment, hereinafter referred to as set processing) (S702). The setting information 60 may include the device information 64 and the detail setting 66 set in the during-selection setting memory 13*b* and the time information 68.

Next, if, in the setting information management table 20*a*, within a region in association with the BSSID 61 of the connected access point 50, and another processing type 62 that is different from the set processing, there is a blank region, in other words, if, there is processing for which the setting information 60 has not been set for the connected access point 50 (S704: Yes), the CPU 11 may cause the setting information 60 to be stored in the blank region (S706). That is to say, the setting information 60 may be stored in association with the BSSID 61 of the connected access point 50 and the other processing type 62. However, here, the setting information 60 that is to be stored may include the device information 64 set in the during-selection setting memory 13*b* and the time information 68 representing the current date and time, but not the detail setting 66. Note that if, in the setting information management table 20*a*, within the region in association with the BSSID 61 of the connected access point 50 and the other processing type 62 that is different from the set processing, there is no blank region (S704: No), the CPU 11 skips the processing of S706.

Next, the CPU 11 may update a region corresponding to the set processing type 62 in the latest setting management table 20*b* with the detail setting 66 stored in the during-selection setting memory 13*b* (S708), and finishes the processing. That is to say, the detail setting 66 stored in association with the set processing type 62 may be overwritten by the latest detail setting 66.

FIG. 8 is a flow chart showing an example of setting read-out processing of the third embodiment. The setting read-out processing of the third embodiment may be performed instead of the setting read-out processing of the first embodiment. The CPU 11 may first acquire the BSSID of one of the connected access points 50 (S802), and may read the currently selected processing, namely, the set processing (S803).

Next, the CPU 11 may search for the setting information 60 stored in the setting information management table 20*a* in association with the acquired BSSID 61 and the set processing type 62 (S804). When the setting information 60 satisfying a condition is stored (S806: Yes), the CPU 11 may read from the setting information management table 20*a* the setting information 60 stored in association with the acquired BSSID 61 and the set processing type 62, and may set in the during-selection setting memory 13*b*, the device information 64 and the detail setting 66 included in the setting information 60 (S808). However, as described with reference to FIG. 7B, in the third embodiment, the setting information 60 may include, in one case, the device information 64 and the detail setting 66, and in another, the device information 64 but not the detail setting 66. Therefore, when no detail setting 66 is included in the setting information 60, only the device information 64 may be set in the during-selection setting memory 13*b*. The CPU 11 then returns to the processing of S312 (FIG. 3). In this case, when the device information 64 and the detail setting 66 are included in the setting information 60, as shown in FIG. 5A, the setting screen showing the state where the device information 64 and the detail setting 66 are preset may be displayed. Meanwhile, when no detail setting 66 is included in the setting information 60, as shown in FIG. 5B, the setting screen showing the state where only the device information 64 is preset may be displayed.

Meanwhile, when no setting information 60 in association with the acquired BSSID 61 and the set processing type 62 has been stored in the setting information management table 20*a* (S806: No), and when the detail setting 66 in association with the set processing type 62 has been stored in the latest setting management table 20*b* (S810: Yes), the CPU 11 may read from the latest setting management table 20*b*, the detail setting 66 in association with the set processing type 62, and may set the detail setting 66 in the during-selection setting memory 13*b* (S812). Then, the CPU 11 may return to the processing of S312 (FIG. 3). In this case, as shown in FIG. 5C, the setting screen showing the state where the detail setting 66 is preset may be displayed. Note that when no detail setting 66 in association with the set processing type 62 has been stored in the latest setting management table 20*b* (S810: No), the CPU 11 skips the processing of S812. In this case, the setting screen showing the state where no device information 64 and detail setting 66 are set may be displayed.

According to the third embodiment, when the setting information **60** (including the device information **64**, the detail setting **66** and the time information **68**) is stored in association with the BSSID **61** of the connected access point **50** and the set processing type **62**, the setting information **60** (including the device information **64**, but not the detail setting **66**) may be also stored in association with the BSSID **61** thereof and another processing type **62**. Thus, when the portable terminal **10** uses the same access point **50** the next time and onward, even if another processing is to be set, the device information **64** that was set when the access point **50** was connected in the past may be inherited and used.

In addition, according to the third embodiment, even if no setting information **60** has been stored in association with the BSSID **61** of the connected access point **50** and the set processing type **62**, by using the latest detail setting **66** stored in the latest setting management table **20***b*, the appropriate detail setting **66** to the set processing may be inherited and used.

A fourth embodiment will be described with reference to FIGS. **9**A to **9**C. Note that the application **14***b* of the fourth embodiment may cause the CPU **11** to perform setting read-out processing shown in FIG. **9**A instead of the setting read-out processing of the first embodiment (FIG. **4**). In addition, the application **14***b* of the third embodiment may cause the CPU **11** to perform the setting storage processing of the third embodiment (FIG. **7**B) instead of the processing of S**318** included in the device usage processing of the first embodiment. Other processing which the application **14***b* of the fourth embodiment causes the CPU **11** to perform may be similar to that of the first embodiment.

FIG. **9**A is an example of the setting read-out processing (S**310**) performed by the CPU **11** according to the application **14***b* of the fourth embodiment. The CPU **11** may first perform the latest setting read-out processing (S**902**). FIG. **9**B is a flow chart showing an example of the latest setting read-out processing (S**902**). In this processing, the CPU **11** may read from the latest setting management table **20***b* the detail setting **66** in association with the set processing (S**9022**), and sets the read detail setting **66** in the during-selection setting memory **13***b*, and then finishes the latest setting read-out processing (S**9024**).

Returning to FIG. **9**A, the description is continued. Next, the CPU **11** may perform location read-out processing, (S**904**). FIG. **9**C is a flow chart showing an example of the location read-out processing (S**904**). The CPU **11** may first acquire the BSSID **61** of the connected access point **50** through the wireless LAN transmitter-receiver **15** (S**9042**), and then may search for the setting information **60** in association with the BSSID **61** and the set processing type **62** (S**9044**).

When there is the setting information **60** satisfying a condition (S**904**: Yes), the CPU **11** may read from the setting information management table **20***a* the setting information **60**, and may set the information acquired from the setting information **60** in the during-selection setting memory **13***b* (S**9048**), and then finishes the location read-out processing. Note that, as described with reference to FIG. **9**C, in the fourth embodiment, the setting information **60** may include, in one case, the device information **64** and the detail setting **66**, and in another, the device information **64** but not the detail setting **66**.

When the setting information **60** includes the device information **64** and the detail setting **66**, in the processing of S**9048**, the device information **64** and the detail setting **66** included in the setting information **60** may be set in the during-selection setting memory **13***b*. Therefore, the detail setting **66** set in the during-selection setting memory **13***b* in the latest setting read-out processing (S**902**) may be overwritten by the detail setting **66** in the setting information **60**, thus, the device information **64** and the detail setting **66** acquired from the setting information **60** may be set in the during-selection setting memory **13***b*.

In addition, when the setting information **60** includes the device information **64** but not the detail setting **66**, in the processing of S**9048**, only the device information **64** may be set in the during-selection setting memory **13***b*. Therefore, in the during-selection setting memory **13***b*, the device information **64** acquired from the setting information **60** and the detail setting **66** set in the latest setting read-out processing (S**902**) may be set.

Meanwhile, if there is no setting information **60** satisfying a condition (S**9046**: No), the CPU **11** skips the processing of S**9048**, and finishes the location read-out processing. In this case, in the during-selection setting memory **13***b*, only the detail setting **66** that is set in the latest setting read-out processing (S**902**) may be set, and the device information **64** may not be set.

According to the setting read-out processing of the fourth embodiment, the setting information **60** stored in the setting information management table **20***a* and the detail setting **66** stored in the latest setting management table **20***h* may be used to reduce the work load on the user, which is needed for the setting operation as in the first embodiment.

In the embodiments, the portable terminal **10** represents an example of an information processing apparatus. The device information **64** represents an example of specific information. The detail setting **66** represents an example of a processing setting value.

The CPU **11** represents an example of a computer, a processor, an acquiring portion, first to fourth read-out portions and first to fourth setting portions. The wireless LAN transmitter-receiver **15** represents an example of a connecting portion. The operation key **16** and the touch panel **17** are an example of an input portion. The memory card **20** represents an example of a first memory and a second memory. However, each portion including the acquiring portion, the first to fourth read-out portions, the first to fourth setting portions, the connecting portion, and the input portion may be discrete hardware, or hardware that operates by executing a program of the present invention or a program other than the present invention such as an operating system. In addition, each portion may be hardware that operates by combining processes by plural programs. Further, the first memory and the second memory may be a memory included in the portable terminal **10** such as the flash memory **14**, or may be distributed.

S**318**, S**602** and S**702** represent examples of a first storing step. S**402**, S**802** and S**9042** represent an example of a first acquiring step. S**408**, S**808** and S**9048** represent an example of a first reading step and a first setting step. S**412** represents an example of a fourth reading step and a fourth setting step. S**416** represents an example of a second reading step and a second setting step. S**706** represents an example of a third storing step. S**708** represents an example of a second storing step. S**812** and S**9022** represent an example of a third reading step. S**812** and S**9024** represent an example of a third setting step.

Although the present invention has been described based on the embodiments, it will be understood readily by those skilled in the art that the present invention is not limited to the embodiments described above, and various changes and modifications may be made without departing from the spirit and scope of the invention.

For example, although in the embodiments, the portable terminal **10** represents an example of an information process-

ing apparatus, examples of the image processing apparatus may include various devices such as a personal computer and a digital camera.

Furthermore, although in the embodiments, processing that the application **14***b* can instruct the device **30** to perform includes PDF printing, photo-printing and scanning, the application **14***b* may be configured to instruct to perform another processing including web printing, document scanning and image scanning.

Moreover, although several types of processing have been prepared for printing, and only one type has been prepared for scanning in the embodiments, several types for printing only or scanning only may be prepared. In addition, several types for scanning and one type for printing may be prepared.

In addition, although the device **30** performs printing and scanning in the embodiments, if the device is available via the access point **50**, the device may perform only printing or scanning, and the device may be capable of performing other processing than printing and scanning.

Further, the embodiments have been described in which the device usage processing (FIG. **3**) is performed when the user activates the application **14***b* on the portable terminal **10**. However, when the OS **14***a* is the Android (registered trademark) OS, the device usage processing may be performed also when the application **14***b* is activated by selecting the application **14***b* as a common output destination of a common function of the Android.

Furthermore, although in the embodiments, the BSSID has been described as an example of identification information of the access point **50**, without being limited thereto, the identification information may be an ESSID (Extended Service Set Identifier). The BSSID is a unique value in a network; on the other hand, the ESSID is a value that may be set by an administrator arbitrarily. When the present invention is applied with the BSSID serving as the identification information, setting can be inherited more strictly at each access point **50**. On the other hand, when the present invention is applied with the ESSID serving as the identification information, setting can be inherited more flexibly. That is to say, even for the different access point **50**, if the same ESSID (e.g., Home, Office) is set due to the uses being for similar purposes or the like, setting can be inherited for each of the ESSID.

Moreover, in the embodiments, changes of the device information **64** and the detail setting **66** based on a user operation are accepted. However, the application **14***b* may be configured to instruct the device **30** to perform processing without accepting the changes of the device information **64** and the detail setting **66** that are set using the setting information **60** read from the setting information management table **20***a* or the detail setting **66** read from the latest setting management table **20***b*.

In addition, the first embodiment has been described in such a way that when the setting information **60** is used which is in association with the BSSID **61** of the connected access point **50**, and another processing type **62** that is different from the set processing (S**412** of FIG. **4**), only the device information **64** in the setting information **60** is inherited. However, the application **14***b* may be configured to inherit the device information **64** and the detail setting **66**. This is because, for example, when printing an image via a home access point **50**, there are cases where the valid detail setting **66** may be inherited regardless of PDF processing or photo-printing such as executing monochrome printing.

Similarly, the third and fourth embodiments have been described in such a way that when the setting information **60** is stored in association with the BSSID **61** of the connected access point **50**, and another processing type **62** (S**706** of FIG. **7**B), the setting information **60** includes the device information **64** but not the detail setting **66**. However, the application **14***b* may be configured to store the device information **64** and the detail setting **66** in the setting information **60**.

Further, in the embodiments, each region in the setting information management table **20***a* is blank before the setting information **60** is written. However, for example, the setting information **60** including the default detail setting **66** may be written in advance in each region in the setting information management table **20***a*. In that case, in the fourth embodiment, when the device information **64** and the detail setting **66** read from the setting information management table **20***a* are set in the during-selection setting memory **13***b* (S**9048** of FIG. **9**C), if the detail setting **66** is default, only the device information **64** may be set in the during-selection setting memory **13***b*. This may prevent the detail setting **66** read from the latest setting management table **20***b* and written in the during-selection setting memory **13***b* in the previous latest setting read-out processing (S**902**) from being overwritten by the default detail setting **66**.

Moreover, when the detail setting **66** is used, which is in association with the BSSID **61** of another access point **50** that is different from the connected access point **50**, and in association with the processing set in the selected processing memory **13***a*, sometimes the detail setting **66** may not be used directly. This may be the case when, for example, color printing cannot be performed in the device available via the connected access point **50** but color printing can be performed in the device available via another access point **50**. In this case, among the detail settings **66** in association with other access points **50**, a setting (e.g., color printing) that cannot be performed in the device via the connected access point **50** may be automatically changed to the default setting (e.g., monochrome printing).

In addition, in the third and fourth embodiments, no time information **68** may be stored in the setting information management table **20***a*.

Furthermore, a table such as the setting information management table **20***a* may not be used to store setting information. For example, as shown in FIG. **10**, a log (setting information) including the BSSID **61**, the processing type **62**, the device information **64**, the detail setting **66** and the time information **68** may be stored. In that case, for each combination of the BSSID **61** and the processing type **62**, only the latest log may be stored or plural logs may be stored.

What is claimed is:

**1**. An information processing apparatus comprising:

a communication unit communicable with a device via an access point which relays communication data; and

a controller configured to:

store, in a first storage portion, setting information that is set for a predetermined type of processing, of a plurality of types of processing, that the device is configured to perform, the setting information being stored in association with identification information of an access point to which the communication unit is connected and with a plurality of pieces of processing that includes at least one of printing and scanning;

acquire the identification information of the access point to which the communication unit is connected;

read the setting information stored in association with the identification information of the access point acquired from the first storage portion and with a selected one of the plurality of pieces of processing, the setting information including at least one of specifying information for specifying the device and a setting value of the predetermined type of processing;

set the type of processing to be performed by the device based on the read setting information corresponding to the access point; and

set the selected one of the plurality of pieces of processing by using the read setting information.

**2**. The information processing apparatus according to claim **1**, wherein

the plurality of pieces of processing includes a plurality of types of printing.

**3**. The information processing apparatus according to claim **1**, wherein

the plurality of pieces of processing includes a plurality of types of scanning.

**4**. The information processing apparatus according to claim **1**, wherein

the controller is further configured to read, from the first storage portion, at least the setting value included in the setting information in association with another identification information that is different from the acquired identification information of the access point and the selected one of the plurality of pieces of processing, and configured to set the selected one of the plurality of pieces of processing by using the read setting value.

**5**. The information processing apparatus according to claim **4**, wherein

the setting value is included in latest setting information stored in the first storage portion.

**6**. The information processing apparatus according to claim **1**, wherein

the controller is further configured to:

store, in a second storage portion, the setting value set for the predetermined type of processing in association with the predetermined type of processing;

read the setting value, which is stored in the second storage portion, in association with the selected one of the plurality of pieces of processing; and

set the selected one of the plurality of processing by using the read setting value.

**7**. The information processing apparatus according to claim **1**, wherein

the controller is further configured to:

read, from the first storage portion, specifying information of at least the device among setting information in association with the acquired identification information of the access point and processing that is different from the selected one of the plurality of pieces of processing; and

set the selected one of the plurality of pieces of processing using the read specifying information of the device.

**8**. The information processing apparatus according to claim **1**, wherein

the controller is configured to store, when selection of a device connected to the access point and a setting value are inputted, setting information including specifying information of the device and the inputted setting value in association with the acquired identification information and the selected one of the plurality of pieces of processing,

the controller is further configured to store, in the first storage portion, the specifying information of the device in association with the acquired identification information and processing other than the selected one of the plurality of pieces of processing.

**9**. An information processing method for an information processing apparatus comprising a communication unit communicable with a device via an access point which relays communication data, the information processing method comprising:

storing, in a first storage portion, setting information that is set for a predetermined type of processing, of a plurality of types of processing, that the device is configured to perform, the setting information being stored in association with identification information of an access point to which the communication unit is connected and with a plurality of pieces of processing that includes at least one of printing and scanning;

acquiring the identification information of the access point to which the communication unit is connected;

reading the setting information stored in association with the identification information of the access point acquired from the first storage portion and with a selected one of the plurality of pieces of processing, the setting information including at least one of specifying information for specifying the device and a setting value of the predetermined type of processing;

setting the type of processing to be performed by the device based on the read setting information corresponding to the access point; and

setting the selected one of the plurality of pieces of processing by using the read setting information.

**10**. A non-transitory computer-readable recording medium storing a program for an information processing apparatus comprising a communication unit communicable with a device via an access point which relays communication data, the program, when executed by a processor, causes the information processing apparatus to execute:

a first storing step of storing, in a first storage portion, setting information that is set for a predetermined type of processing, of a plurality of types of processing, that the device is configured to perform, the setting information being stored in association with identification information of an access point to which the communication unit is connected and with a plurality of pieces of processing that includes at least one of printing and scanning;

a first acquiring step of acquiring the identification information of the access point to which the communication unit is connected;

a first reading step of reading the setting information stored in association with the identification information of the access point acquired from the first storage portion and with a selected one of the plurality of pieces of processing, the setting information including at least one of specifying information for specifying the device and a setting value of the predetermined type of processing;

a first setting step of setting the type of processing to be performed by the device based on the read setting information corresponding to the access point,

wherein the first setting step further includes setting the selected one of the plurality of pieces of processing by using the read setting information.

**11**. The recording medium to claim **10**, wherein

the program, when executed by a processor, causes the information processing apparatus to further execute:

a second reading step of reading, from the first storage portion, at least the setting value included in the setting information in association with another identification information that is different from the acquired identification information of the access point and the selected one of the plurality of pieces of processing; and

a second setting step of setting the selected one of the plurality of pieces of processing by using the read setting value.

12. The recording medium according to claim 11, wherein the setting value is included in latest setting information stored in the first storage portion.

13. The recording medium according to claim 10, wherein the program, when executed by a processor, causes the information processing apparatus to further executes:

a second storing step of storing, in a second storage portion, the setting value set for the predetermined type of processing in association with the predetermined type of processing;

a third reading step of reading the setting value, which is stored in the second storage portion, in association with the selected one of the plurality of pieces of processing; and

a third setting step of setting the selected one of the plurality of pieces of processing by using the read setting value.

14. The recording medium according to claim 10, wherein the program, when executed by a processor, causes the information processing apparatus to further executes:

a fourth reading step of reading, from the first storage portion, specifying information of at least the device among setting information in association with the acquired identification information of the access point and processing that is different from the selected one of the plurality of pieces of processing; and

a fourth setting step of setting the selected one of the plurality of pieces of processing using the read specifying information of the device.

15. The recording medium according to claim 10, wherein the first storing step of storing includes storing, when selection of a device connected to the access point and the setting value are inputted, setting information including specifying information of the device and the inputted setting value in association with the acquired identification information and the selected one of the plurality of pieces of processing, and

the program, when executed by a processor, causes the information processing apparatus to further executes a third step of storing, in the first storage portion, the specifying information of the device in association with the acquired identification information and processing other than the selected one of the plurality of pieces of processing.

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